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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,558	08/04/2003	Ralph H. Johnson	M40-17234	6028

7590 05/17/2005

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EXAMINER

NGUYEN, PHILLIP

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/634,558

**Applicant(s)**

JOHNSON, RALPH H.

**Examiner**

Phillip Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### DETAILED ACTION

1. Claims 1-25 are misnumbered because claim 11 is repeated twice , claims 14 and 17 are skipped. Misnumbered claims 1-25 have been renumbered to 1-24. The following Office Action will address to the claim order after renumbering.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 fails to define “a stabilizing material”.

Claim 19 is to depend on itself which is improper. For the purpose of examination, Examiner assumes that the claim is dependent of claim 18.

Claim 21 recites “the first and the second mirrors layers” which are lack of antecedance basic.

***Double Patenting***

3. Claims 1-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,603,784. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 1-19 of the present application are broader than the patented claims.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-2 and 19-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Jackquet et al. ('015).

With respect to claim 1, Jackquet discloses an active layer in a semiconductor light emitting device comprising at least one quantum well including layers of a semiconductor alloy under mechanical stress with layers of stabilizing material (col. 5, lines 19-26).

With respect to claims 2 and 20, Jackquet discloses the device being an edge emitting laser.

With respect to claim 19, Jackquet discloses in Fig. 1-2 the claimed invention as in claim 1 and further with barrier layers sandwiching the active layer; and mirror layers (12) disposed outside of the barrier layers (col. 5, lines 19-26).

With respect to claim 21, Jackquet discloses the alloy layers are comprised of InGaAs (col. 5, lines 19-21).

*The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).*

6. Claims 1-6, 11-14, and 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Valster et al. ('047).

With respect to claims 1, 3, 5, 11, and 18, Valster discloses in Fig. 1-2 an active layer 2 in a semiconductor light emitting device comprising at least one quantum well 2A including layers of a semiconductor alloy (GaInP or InAlGaP) under mechanical stress with layers 4 and 4A of stabilizing material wherein the layers of stabilizing material are nearly lattice matched to substrate material used in the device and serve as mechanical stabilizers for the layers of semiconductor alloy under mechanical stress to prevent them from relaxing (col. 2, lines 57-67). Valster further discloses a barrier layers sandwiching the active layer (4, 4A, 2A) and mirror layers disposed outside the barrier layer (col. 4, lines 7-11).

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With respect to claims 2, 4, 12, and 19, Valster discloses the device being an edge-emitting laser.

With respect to claims 6 and 13, Valster discloses the substrate type material comprising GaAs (col. 3, line 13).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-10, 14-15, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valster et al. ('047) in view of Melman et al. ('360).

With respect to claims 7, 14 and 21-22, Valster discloses the claimed invention except for InGaAs, GaAsSb, or InGaAsSb. Melman discloses a quantum well structure with the active layer including InGaAs (col. 4, lines 51-56). For the improvement of the quantum well, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide InGaAs as taught by Melman because it is well known in the art to use such the material in the active layer.

With respect to claims 8, 10, 15, and 23-24, Melman discloses that a single quantum well layer with a thickness of 60 Å so that a multiple quantum well layers would have a thickness in a range of between 80-250 Å. Valster and Melman do not disclose the thickness of the layers of stabilizing material and the alloy layer. It would have been obvious to one having ordinary skill

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in the art at the time the invention was made to provide a thickness about 9.5 Å to 11.2 Å for the quantum well layer and 24 Å , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges and optimum value involves only routine skill in the art. *In re Aller*, 105 USPQ 233 and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### *Citation of Pertinent References*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Jacquet et al. discloses Device in Particular...Waves, U.S. Patent No. 6148015

The patent to Melman et al. discloses Method ...Structures, U.S. Patent No. 5021360

The patent to Valster et al. discloses Radiation ...Manufacturing, U.S. Patent No. 5987047

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***Communication Information***

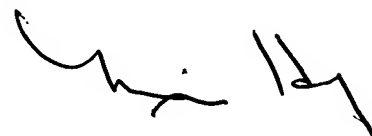
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**MINSUN HARVEY  
PRIMARY EXAMINER**